

## AMENDMENTS TO THE CLAIMS

1. (currently amended): A multi-stage process for the polymerization of olefins comprising:
  - (I) a first polymerization stage, wherein one or more olefins of the formula  $\text{CH}_2=\text{CHR}$ , wherein R is selected from the group consisting of hydrogen, a linear or branched, saturated or unsaturated  $\text{C}_1\text{-C}_{10}$  alkyl, a cycloalkyl and an aryl radical, are polymerized in one or more reactors, in the presence of a catalyst comprising the product of the reaction between an alkyl-Al compound and a solid component comprising at least one compound of a transition metal  $\text{M}^{\text{I}}$  chosen from Ti and V, and not containing  $\text{M}^{\text{I}}\text{-}\pi$  bonds, and a halide of Mg, in order to produce an olefinic polymer having porosity, expressed as the percentage of voids, greater than 5%;
  - (II) a treatment stage, wherein the product obtained in said first polymerization stage (I) is, in any order whatever:
    - (a) optionally contacted with a compound capable of deactivating the catalyst used in stage (I); and
    - (b) contacted with a late transition metal complex, optionally in the presence of a suitable activating agent; and
  - (III) a second polymerization stage, wherein one or more olefinic monomers are polymerized in one or more reactors, in the presence of the product obtained from stage (II)[[.]]; wherein the amount of polymer produced in the first polymerization stage (I) is between 10 and ~~90%~~ 99% by weight relative to the total amount of polymer produced in stages (I) and (III).
2. (original): The multi-stage process according to claim 1 wherein, in stage (I), said alkyl-Al compound is a trialkyl-Al, an alkyl-Al halide or an alkyl-Al sesquichloride, said halide of Mg is  $\text{MgCl}_2$  and said compound of a transition metal  $\text{M}^{\text{I}}$  is selected from the group consisting of halides of Ti, halo alkoxides of Ti,  $\text{VCl}_3$ ,  $\text{VCl}_4$ ,  $\text{VOCl}_3$  and halo alkoxides of V.
3. (original): The multi-stage process according to claim 2, wherein said compound of a transition metal  $\text{M}^{\text{I}}$  is selected from the group consisting of  $\text{TiCl}_4$ ,  $\text{TiCl}_3$  and halo

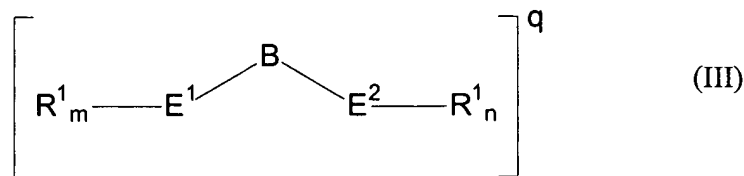
alkoxides of the formula  $\text{Ti}(\text{OR}^{\text{I}})_m\text{X}_n$ , wherein  $\text{R}^{\text{I}}$  is a  $\text{C}_1\text{-C}_{12}$  hydrocarbon radical or a  $-\text{COR}^{\text{I}}$  group, X is halogen and  $(m+n)$  corresponds to the oxidation state of Ti.

4. (original): The multi-stage process according to claim 1 wherein, in stage (I), said solid component is in the form of spherical particles having a mean diameter ranging from 10  $\mu\text{m}$  to 150  $\mu\text{m}$ .
5. (original): The multi-stage process according to claim 1, wherein the catalyst used in stage (I) comprises the product of the reaction between an Al-alkyl compound, an electron-donating compound (external donor) and a solid component comprising at least one compound of a transition metal  $\text{M}^{\text{I}}$  selected from Ti and V and not containing  $\text{M}^{\text{I}}-\pi$  bonds, a magnesium halide and an electron-donating compound (internal donor).
6. (original): The multi-stage process according to claim 1, wherein the porosity of the olefinic polymer obtained in the first polymerization stage (I) is greater than 10%.
7. (original): The multi-stage process according to claim 6, wherein more than 40% of said porosity is due to pores with diameter greater than 10,000 Å.
8. (original): The multi-stage process according to claim 1 wherein, in the treatment stage (II)(a), said compound capable of deactivating the catalyst used in stage (I) has formula  $\text{R}^{\text{IV}}_{y-1}\text{XH}$ , wherein  $\text{R}^{\text{IV}}$  is hydrogen or a  $\text{C}_1\text{-C}_{10}$  hydrocarbon radical, X is O, N, or S, and y corresponds to the valence of X.
9. (original): The multi-stage process according to claim 8, wherein said compound capable of deactivating the catalyst used in stage (I) is selected from the group consisting of  $\text{H}_2\text{O}$ ,  $\text{NH}_3$ ,  $\text{H}_2\text{S}$ , CO, COS,  $\text{CS}_2$ ,  $\text{CO}_2$  and  $\text{O}_2$ .
10. (previously presented): The multi-stage process according to claim 1 wherein, in the treatment stage (II)(b), said late transition metal complex has the formula (I) or (II):



wherein M is a metal belonging to Group 8, 9, 10 or 11 of the Periodic Table;

L is a bidentate or tridentate ligand of the formula (III):



wherein:

B is a C<sub>1</sub>-C<sub>50</sub> bridging group linking E<sup>1</sup> and E<sup>2</sup>, optionally containing one or more atoms belonging to Groups 13-17 of the Periodic Table;

E<sup>1</sup> and E<sup>2</sup>, the same or different from each other, are elements belonging to Group 15 or 16 of the Periodic Table and are bonded to said metal M;

the substituents R<sup>1</sup>, the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated C<sub>1</sub>-C<sub>20</sub> alkyl, C<sub>1</sub>-C<sub>20</sub> alkylidene, C<sub>3</sub>-C<sub>20</sub> cycloalkyl, C<sub>6</sub>-C<sub>20</sub> aryl, C<sub>7</sub>-C<sub>20</sub> alkylaryl and C<sub>7</sub>-C<sub>20</sub> arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table of the Elements (such as B, Al, Si, Ge, N, P, O, S, F and Cl atoms); or two R<sup>1</sup> substituents attached to the same atom E<sup>1</sup> or E<sup>2</sup> form a saturated, unsaturated or aromatic C<sub>4</sub>-C<sub>8</sub> ring, having from 4 to 20 carbon atoms; m and n are independently 0, 1 or 2, depending on the valence of E<sup>1</sup> and E<sup>2</sup>, so to satisfy the valence number of E<sup>1</sup> and E<sup>2</sup>; q is the charge of the bidentate or tridentate ligand so that the oxidation state of MX<sub>p</sub>X', or MA is satisfied, and the compound (I) or (II) is overall neutral;

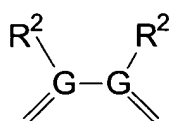
X, the same or different from each other, are monoanionic sigma ligands selected from the group consisting of hydrogen, halogen, -R, -OR, -OSO<sub>2</sub>CF<sub>3</sub>, -OCOR, -SR, -NR<sub>2</sub> and -PR<sub>2</sub> groups, wherein the R substituents are selected from the group consisting of linear or branched, saturated or unsaturated, C<sub>1</sub>-C<sub>20</sub> alkyl, C<sub>3</sub>-C<sub>20</sub> cycloalkyl, C<sub>6</sub>-C<sub>20</sub> aryl, C<sub>7</sub>-C<sub>20</sub> alkylaryl and C<sub>7</sub>-C<sub>20</sub> arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table of the Elements (new IUPAC notation); or two X groups form a metallacycle ring containing from 3 to 20 carbon atoms;

X' is a coordinating ligand selected from mono-olefins and neutral Lewis bases wherein the coordinating atom is N, P, O or S;

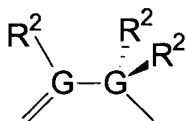
p is an integer ranging from 0 to 3, so that the final compound (I) or (II) is overall neutral;

s is an integer from 0 to 3; and A is a  $\pi$ -allyl or a  $\pi$ -benzyl group.

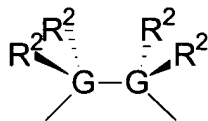
11. (original): The multi-stage process according to claim 10, wherein said bridging group B is selected from the group consisting of:



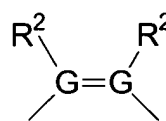
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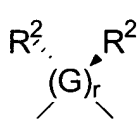
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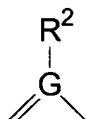
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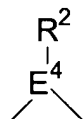
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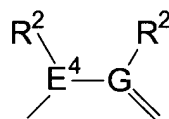
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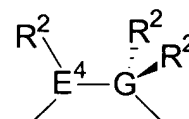
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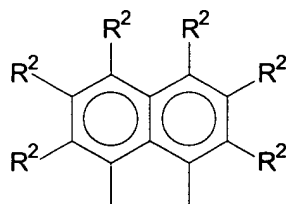
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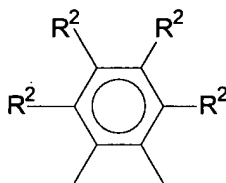
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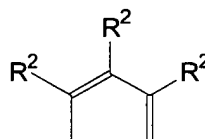
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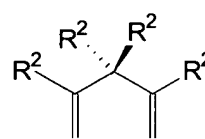
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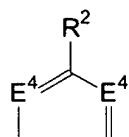
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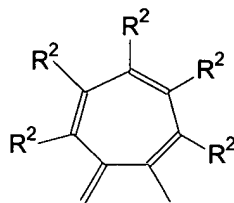
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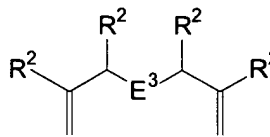
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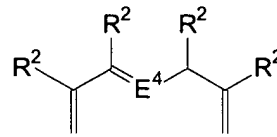
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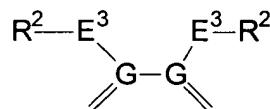
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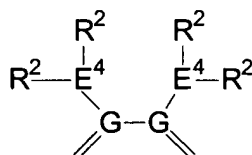
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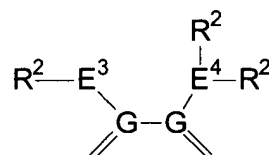
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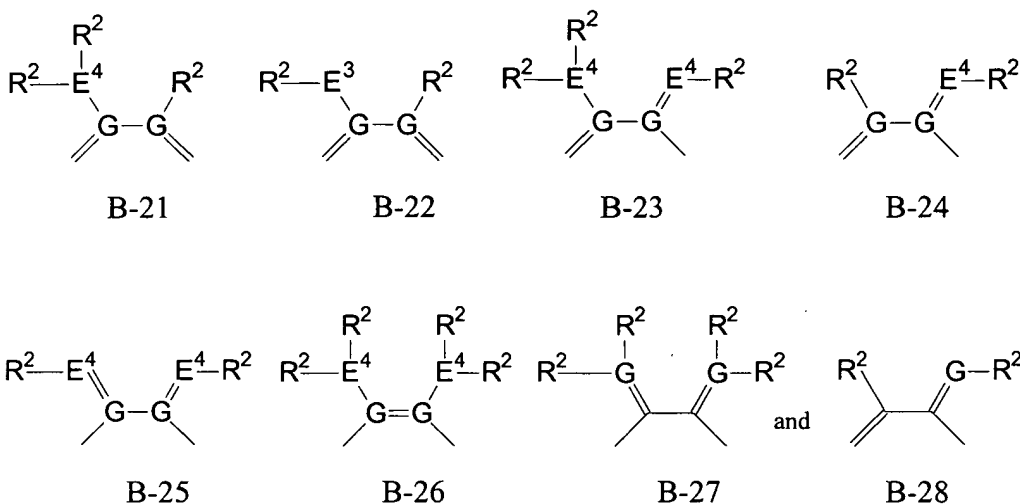
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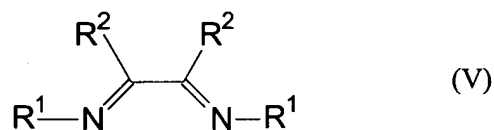
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wherein G is an element belonging to Group 14 of the Periodic Table; r is an integer ranging from 1 to 5; E<sup>3</sup> is an element belonging to Group 16 and E<sup>4</sup> is an element belonging to Group 13 or 15 of the Periodic Table; the substituents R<sup>2</sup>, the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated C<sub>1</sub>-C<sub>20</sub> alkyl, C<sub>1</sub>-C<sub>20</sub> alkoxy, C<sub>3</sub>-C<sub>20</sub> cycloalkyl, C<sub>6</sub>-C<sub>20</sub> aryl, C<sub>7</sub>-C<sub>20</sub> alkylaryl and C<sub>7</sub>-C<sub>20</sub> arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; or two R<sup>2</sup> substituents form a saturated, unsaturated or aromatic C<sub>4</sub>-C<sub>8</sub> ring, having from 4 to 20 carbon atoms, or they form a polycyclic ring system, optionally containing one or more Group 13-16 elements; a substituent R<sup>1</sup> and a substituent R<sup>2</sup> may form a substituted or unsubstituted, saturated, unsaturated or aromatic C<sub>4</sub>-C<sub>8</sub> ring, having from 4 to 20 carbon atoms and optionally containing one or more Group 13-16 element.

12. (original): The multi-stage process according to claim 10, wherein E<sup>1</sup> and E<sup>2</sup> are selected from the group consisting of N, P, O, and S.
13. (previously presented): The multi-stage process according to claim 10, wherein the substituents R<sup>1</sup> are C<sub>6</sub>-C<sub>20</sub> aryl groups; the substituents X are selected from the group consisting of hydrogen, methyl, phenyl, Cl, Br and I; and p is an integer from 1 to 3.
14. (previously presented): The multi-stage process according to claim 10, wherein

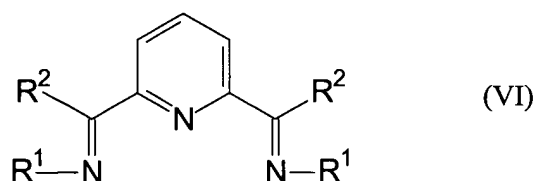
said ligand L corresponds to formula (V):



wherein  $\text{R}^1$  has the meaning reported in claim 10; the substituents  $\text{R}^2$ , the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated  $\text{C}_1\text{--C}_{20}$  alkyl,  $\text{C}_1\text{--C}_{20}$  alkoxy,  $\text{C}_3\text{--C}_{20}$  cycloalkyl,  $\text{C}_6\text{--C}_{20}$  aryl,  $\text{C}_7\text{--C}_{20}$  alkylaryl and  $\text{C}_7\text{--C}_{20}$  arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; or two  $\text{R}^2$  substituents form a saturated, unsaturated or aromatic  $\text{C}_4\text{--C}_8$  ring, having from 4 to 20 carbon atoms, or they form a polycyclic ring system, optionally containing one or more Group 13-16 elements; a substituent  $\text{R}^1$  and a substituent  $\text{R}^2$  may form a substituted or unsubstituted, saturated, unsaturated or aromatic  $\text{C}_4\text{--C}_8$  ring, having from 4 to 20 carbon atoms and optionally containing one or more Group 13-16 element;

M belongs to Group 10 of the Periodic Table; X radicals are selected from the group consisting of hydrogen, methyl, Cl, Br and I; p is 2 or 3; and s is 0.

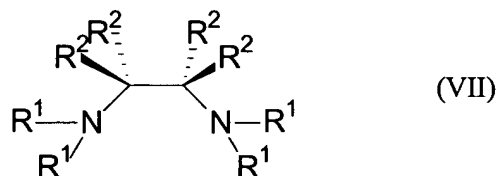
15. (previously presented): The multi-stage process according to claim 14, wherein the substituents  $\text{R}^1$  are  $\text{C}_6\text{--C}_{20}$  aryl groups, optionally substituted in the 2 and 6 positions with at least one of (a) alkyl groups containing 1 to 20 carbon atoms and (b) halo groups; the substituents  $\text{R}^2$  are selected from the group consisting of hydrogen, methyl, ethyl, n-propyl, i-propyl and benzyl, or the two substituents  $\text{R}^2$  form together a naphthylene group.
16. (withdrawn): The multi-stage process according to claim 10, wherein said ligand L corresponds to formula (VI):



wherein the  $\text{R}^1$  has the meaning reported in claim 10, the substituents  $\text{R}^2$ , the same or different from each other, are selected from the group consisting of hydrogen,

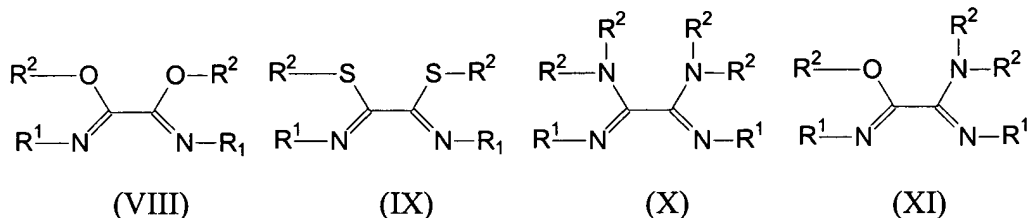
linear or branched, saturated or unsaturated C<sub>1</sub>-C<sub>20</sub> alkyl, C<sub>1</sub>-C<sub>20</sub> alkoxy, C<sub>3</sub>-C<sub>20</sub> cycloalkyl, C<sub>6</sub>-C<sub>20</sub> aryl, C<sub>7</sub>-C<sub>20</sub> alkylaryl and C<sub>7</sub>-C<sub>20</sub> arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; or two R<sup>2</sup> substituents form a saturated, unsaturated or aromatic C<sub>4</sub>-C<sub>8</sub> ring, having from 4 to 20 carbon atoms, or they form a polycyclic ring system, optionally containing one or more Group 13-16 elements; a substituent R<sup>1</sup> and a substituent R<sup>2</sup> may form a substituted or unsubstituted, saturated, unsaturated or aromatic C<sub>4</sub>-C<sub>8</sub> ring, having from 4 to 20 carbon atoms and optionally containing one or more Group 13-16 element; the metal M is Fe or Co; the X radicals are selected from the group consisting of hydrogen, methyl, Cl, Br and I; p is 2 or 3; and s is 0.

17. (withdrawn): The multi-stage process according to claim 16, wherein the substituents R<sup>2</sup> are hydrogen or methyl, and the substituents R<sup>1</sup> are aryl rings.
18. (withdrawn): The multi-stage process according to claim 10, wherein said ligand L corresponds to formula (VII):

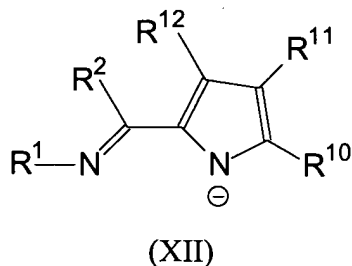


wherein R<sup>1</sup> has the meaning reported in claim 1, the substituents R<sup>2</sup>, the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated C<sub>1</sub>-C<sub>20</sub> alkyl, C<sub>1</sub>-C<sub>20</sub> alkoxy, C<sub>3</sub>-C<sub>20</sub> cycloalkyl, C<sub>6</sub>-C<sub>20</sub> aryl, C<sub>7</sub>-C<sub>20</sub> alkylaryl and C<sub>7</sub>-C<sub>20</sub> arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; or two R<sup>2</sup> substituents form a saturated, unsaturated or aromatic C<sub>4</sub>-C<sub>8</sub> ring, having from 4 to 20 carbon atoms, or they form a polycyclic ring system, optionally containing one or more Group 13-16 elements; a substituent R<sup>1</sup> and a substituent R<sup>2</sup> may form a substituted or unsubstituted, saturated, unsaturated or aromatic C<sub>4</sub>-C<sub>8</sub> ring, having from 4 to 20 carbon atoms and optionally containing one or more Group 13-16 element; M belongs to group 10 of the Periodic Table, the X radicals are selected from the group consisting of hydrogen, methyl, Cl, Br and I; p is 2 or 3; and s is 0.

19. (withdrawn): The multi-stage process according to claim 10, wherein said ligand L corresponds to one of formulae (VIII)-(XI):



- wherein  $\text{R}^1$  has the meaning reported in claim 10, the substituents  $\text{R}^2$ , the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated  $\text{C}_1\text{—C}_{20}$  alkyl,  $\text{C}_1\text{—C}_{20}$  alkoxy,  $\text{C}_3\text{—C}_{20}$  cycloalkyl,  $\text{C}_6\text{—C}_{20}$  aryl,  $\text{C}_7\text{—C}_{20}$  alkylaryl and  $\text{C}_7\text{—C}_{20}$  arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; or two  $\text{R}^2$  substituents form a saturated, unsaturated or aromatic  $\text{C}_4\text{—C}_8$  ring, having from 4 to 20 carbon atoms, or they form a polycyclic ring system, optionally containing one or more Group 13-16 elements; a substituent  $\text{R}^1$  and a substituent  $\text{R}^2$  may form a substituted or unsubstituted, saturated, unsaturated or aromatic  $\text{C}_4\text{—C}_8$  ring, having from 4 to 20 carbon atoms and optionally containing one or more Group 13-16 element; M belongs to Group 10 of the Periodic Table, the X radicals are selected from the group consisting of hydrogen, methyl, Cl, Br and I; p is 2 or 3; and s is 0.
20. (withdrawn): The multi-stage process according to claim 10, wherein said ligand L corresponds to formula (XII):

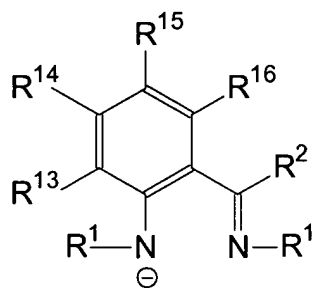


wherein  $\text{R}^1$  has the meaning reported in claim 10; the substituents  $\text{R}^2$ , the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated  $\text{C}_1\text{—C}_{20}$  alkyl,  $\text{C}_1\text{—C}_{20}$  alkoxy,  $\text{C}_3\text{—C}_{20}$  cycloalkyl,  $\text{C}_6\text{—C}_{20}$  aryl,  $\text{C}_7\text{—C}_{20}$  alkylaryl and  $\text{C}_7\text{—C}_{20}$  arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; or



two  $R^2$  substituents form a saturated, unsaturated or aromatic  $C_4$ - $C_8$  ring, having from 4 to 20 carbon atoms, or they form a polycyclic ring system, optionally containing one or more Group 13-16 elements; a substituent  $R^1$  and a substituent  $R^2$  may form a substituted or unsubstituted, saturated, unsaturated or aromatic  $C_4$ - $C_8$  ring, having from 4 to 20 carbon atoms and optionally containing one or more Group 13-16 element;  $R^{10}$ - $R^{12}$ , the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated  $C_1$ - $C_{20}$  alkyl,  $C_3$ - $C_{20}$  cycloalkyl,  $C_6$ - $C_{20}$  aryl,  $C_7$ - $C_{20}$  alkylaryl and  $C_7$ - $C_{20}$  arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; or two adjacent substituents  $R^{10}$ - $R^{12}$  form a saturated, unsaturated or aromatic  $C_4$ - $C_8$  ring, having from 4 to 40 carbon atoms; the metal M is selected from the group consisting of Fe, Co, Rh, Ni and Pd; the X radicals are selected from the group consisting of hydrogen, methyl, Cl, Br and I; p is 2 or 3; and s is 0.

21. (withdrawn): The multi-stage process according to claim 10, wherein said ligand L corresponds to formula (XIII):

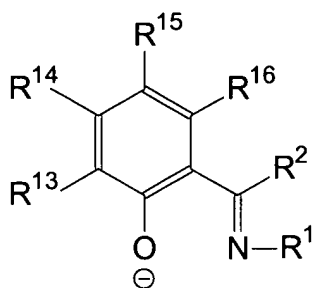


(XIII)

wherein  $R^1$  has the meaning reported in claim 10; the substituents  $R^2$ , the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated  $C_1$ - $C_{20}$  alkyl,  $C_1$ - $C_{20}$  alkoxy,  $C_3$ - $C_{20}$  cycloalkyl,  $C_6$ - $C_{20}$  aryl,  $C_7$ - $C_{20}$  alkylaryl and  $C_7$ - $C_{20}$  arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; or two  $R^2$  substituents form a saturated, unsaturated or aromatic  $C_4$ - $C_8$  ring, having from 4 to 20 carbon atoms, or they form a polycyclic ring system, optionally containing one or more Group 13-16 elements; a substituent  $R^1$  and a substituent

$R^2$  may form a substituted or unsubstituted, saturated, unsaturated or aromatic  $C_4$ - $C_8$  ring, having from 4 to 20 carbon atoms and optionally containing one or more Group 13-16 element; the substituents  $R^{14}$  and  $R^{16}$ , the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated  $C_1$ - $C_{20}$  alkyl,  $C_3$ - $C_{20}$  cycloalkyl,  $C_6$ - $C_{20}$  aryl,  $C_7$ - $C_{20}$  alkylaryl and  $C_7$ - $C_{20}$  arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; the substituents  $R^{13}$  and  $R^{15}$ , the same or different from each other, have the same meaning as substituents  $R^{14}$  and  $R^{16}$ , optionally forming with an adjacent substituent  $R^{14}$  or  $R^{16}$  a saturated, unsaturated or aromatic  $C_4$ - $C_8$  ring, or they are electron withdrawing groups; the metal M is selected from the group consisting of Fe, Co, Ni and Pd; the X radicals are selected from the group consisting of hydrogen, methyl, Cl, Br and I; p is 2 or 3; and s is 0.

22. (withdrawn): The multi-stage process according to claim 10, wherein said ligand L corresponds to formula (XIV):

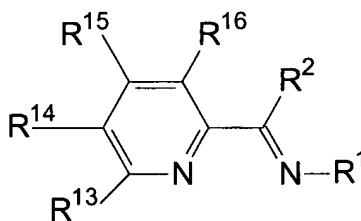


(XIV)

wherein  $R^1$  has the meaning reported in claim 10; the substituents  $R^2$ , the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated  $C_1$ - $C_{20}$  alkyl,  $C_1$ - $C_{20}$  alkoxy,  $C_3$ - $C_{20}$  cycloalkyl,  $C_6$ - $C_{20}$  aryl,  $C_7$ - $C_{20}$  alkylaryl and  $C_7$ - $C_{20}$  arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; or two  $R^2$  substituents form a saturated, unsaturated or aromatic  $C_4$ - $C_8$  ring, having from 4 to 20 carbon atoms, or they form a polycyclic ring system, optionally containing one or more Group 13-16 elements; a substituent  $R^1$  and a substituent  $R^2$  may form a substituted or unsubstituted, saturated, unsaturated or aromatic  $C_4$ -

C<sub>8</sub> ring, having from 4 to 20 carbon atoms and optionally containing one or more Group 13-16 element; R<sup>14</sup> and R<sup>16</sup>, the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated C<sub>1</sub>-C<sub>20</sub> alkyl, C<sub>3</sub>-C<sub>20</sub> cycloalkyl, C<sub>6</sub>-C<sub>20</sub> aryl, C<sub>7</sub>-C<sub>20</sub> alkylaryl and C<sub>7</sub>-C<sub>20</sub> arylalkyl radical, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; R<sup>13</sup> and R<sup>15</sup>, the same or different from each other, have the same meaning as R<sup>14</sup> and R<sup>16</sup>, optionally forming with an adjacent R<sup>14</sup> or R<sup>16</sup> a saturated, unsaturated or aromatic C<sub>4</sub>-C<sub>8</sub> ring, or they are electron withdrawing groups; the metal M belongs to Group 10 of the Periodic Table, the X radicals are selected from hydrogen, methyl, allyl, Cl, Br and I, A is a C<sub>3</sub>-C<sub>5</sub> linear allyl, p is 1 and s is 1.

23. (withdrawn): The multi-stage process according to claim 22 wherein, in said ligand of formula (XIV), R<sup>1</sup> is aryl, substituted in at least one of the 2, 6 and 4 positions with a substituent selected from the group consisting of halogen, linear or branched C<sub>1</sub>-C<sub>20</sub> alkyl groups, and a tertiary C<sub>3</sub>-C<sub>6</sub> alkyl group; R<sup>2</sup> is hydrogen or methyl; R<sup>14</sup> and R<sup>16</sup> are selected from the group consisting of hydrogen, methyl and methoxy; R<sup>13</sup> is selected from the group consisting of aryl, substituted in the 2 and 6 positions with branched C<sub>3</sub>-C<sub>30</sub> alkyl groups, tertiary C<sub>3</sub>-C<sub>6</sub> alkyl group, -NO<sub>2</sub> and halo; and R<sup>15</sup> is selected from the group consisting of aryl, tertiary C<sub>3</sub>-C<sub>6</sub> alkyl group, -NO<sub>2</sub>, halo, -CF<sub>3</sub>, -SO<sub>3</sub><sup>-</sup>, -SO<sub>2</sub>R and -COO<sup>-</sup>.
24. (withdrawn): The multi-stage process according to claim 10, wherein said ligand L corresponds to formula (XV):



(XV)

wherein R<sup>1</sup> has the meaning reported in claim 10; the substituents R<sup>2</sup>, the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated C<sub>1</sub>-C<sub>20</sub> alkyl, C<sub>1</sub>-C<sub>20</sub> alkoxy, C<sub>3</sub>-C<sub>20</sub> cycloalkyl, C<sub>6</sub>-C<sub>20</sub> aryl, C<sub>7</sub>-C<sub>20</sub> alkylaryl and C<sub>7</sub>-C<sub>20</sub> arylalkyl radicals, optionally

containing one or more atoms belonging to groups 13-17 of the Periodic Table; or two  $R^2$  substituents form a saturated, unsaturated or aromatic  $C_4-C_8$  ring, having from 4 to 20 carbon atoms, or they form a polycyclic ring system, optionally containing one or more Group 13-16 elements; a substituent  $R^1$  and a substituent  $R^2$  may form a substituted or unsubstituted, saturated, unsaturated or aromatic  $C_4-C_8$  ring, having from 4 to 20 carbon atoms and optionally containing one or more Group 13-16 element; the substituents  $R^{14}$  and  $R^{16}$ , the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated  $C_1-C_{20}$  alkyl,  $C_3-C_{20}$  cycloalkyl,  $C_6-C_{20}$  aryl,  $C_7-C_{20}$  alkylaryl and  $C_7-C_{20}$  arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; the substituents  $R^{13}$  and  $R^{15}$ , the same or different from each other, have the same meaning of substituents  $R^{14}$  and  $R^{16}$ , optionally forming with an adjacent substituent  $R^{14}$  or  $R^{16}$  a saturated, unsaturated or aromatic  $C_4-C_8$  ring, or they are electron withdrawing groups; the metal M belongs to Group 10 of the Periodic Table; the X radicals are selected from the group consisting of hydrogen, methyl, Cl, Br and I, p is 2 or 3, and s is 0.

25. (withdrawn): The multi-stage process according to claim 1 wherein, in the treatment stage (II)(b), said activating agent is at least one of (a) an alumoxane and (b) a compound able to form an alkylmetal cation.
26. (withdrawn): The multi stage process according to claim 1 wherein, in the treatment stage (II), the product obtained in the first polymerization stage (I) is, in the following order:
  - (a) first contacted with said compound capable of deactivating the catalyst used in stage (I); and
  - (b) then contacted with said late transition metal complex, optionally in the presence of a suitable activating agent.
27. (withdrawn): The multi-stage process according to claim 26 wherein, before step (b), any excess of said compound capable of deactivating the catalyst used in stage (I) is removed.

28. (withdrawn): The multi-stage process according to claim 1, wherein the polymerization stage (I) is carried out in liquid phase, said liquid phase consisting of a hydrocarbon solvent or of one or more olefins  $\text{CH}_2=\text{CHR}$ , and the polymerization stage (III) is carried out in gas phase, in at least one reactor with a fluidized bed or a mechanically-agitated bed.
29. (withdrawn): The multi-stage process according to claim 1, wherein both polymerization stages (I) and (III) are carried out in gas phase, in reactors with a fluidized bed or a mechanically-agitated bed.
30. (withdrawn): A catalyst component for the polymerization of olefins comprising a late transition metal complex supported on a polymeric porous support having a porosity, expressed as percentage of voids, greater than 5%.
31. (withdrawn): A catalyst component for the polymerization of olefins comprising a late transition metal complex supported on a polymeric porous support having a porosity, expressed as percentage of voids, greater than 5%, said catalyst component being obtained by a process comprising:
  - (I) a polymerization stage, wherein one or more olefins of formula  $\text{CH}_2=\text{CHR}$ , wherein R is selected from the group consisting of hydrogen, a linear or branched, saturated or unsaturated  $\text{C}_1\text{-C}_{10}$  alkyl, a cycloalkyl and an aryl radical, in the presence of a catalyst comprising the product of the reaction between one or more alkyl-Al compounds and a solid component comprising at least one compound of a transition metal  $\text{M}^{\text{I}}$  chosen from Ti and V, and not containing  $\text{M}^{\text{I}}\text{-}\pi$  bonds, and a halide of Mg;
  - (II) a treatment stage, wherein the product obtained in the polymerization stage (I) is, in any order:
    - (a) optionally contacted with one or more compounds capable of deactivating the catalyst used in step (I); and
    - (b) contacted with one or more late transition metal complexes, optionally in the presence of a suitable activating agent.
32. (withdrawn): The catalyst component according to claim 30, wherein said late transition metal complex is supported in a quantity from  $1\cdot 10^{-7}$  to  $1\cdot 10^{-1}$  mmol per gram of polymeric porous support.

33. (withdrawn): The catalyst component according to claim 30, wherein said polymeric porous support has a porosity greater than 10%.
34. (withdrawn): The catalyst component according to claim 33, wherein more than 40% of the porosity is due to pores with diameter greater than 10,000 Å.
35. (withdrawn): A polymer composition obtained by the process of claim 1, characterized in that:
- in said first polymerization stage a homo or copolymer of propylene is obtained, having a content of propylene units greater than 80 wt.% and cold xylene soluble fractions less than 40 wt.%, said homo or copolymer of propylene consisting of 10-90 wt.% of the total amount of polymer; and
  - in said second polymerization stage amorphous polyethylene is produced, having a number of total branching greater than 50 branches/1000 carbon atoms, a density from 0.830 to 0.880 g/cm<sup>2</sup>, and a Tg value less than -30°C.
36. (withdrawn): A polymer composition obtained by the process of claim 1, characterized in that:
- in said first polymerization stage polyethylene, polypropylene or propylene/ethylene copolymer is produced, consisting of 10-90 wt.% of the total amount of polymer; and
  - in said second polymerization stage block polyethylene is produced, having a melting point from 100 to 130°C and a Tg value less than -30°C.
37. (withdrawn): A polymer composition obtained by the process of claim 1, characterized in that:
- in said first polymerization stage, a copolymer of ethylene with one or more  $\alpha$ -olefins (LLDPE) is obtained, having a content of ethylene units of 80-99 wt.%, said copolymer of ethylene consisting of 10-90 wt.% of the total amount of polymer;
  - in the second polymerization stage, polyethylene is produced having a number of total branching greater than 5 branches/1000 carbon atoms and a density greater than 0.880 g/cm<sup>3</sup>.

38. (withdrawn): The catalyst component according to claim 31, wherein said late transition metal complex is supported in a quantity from  $1 \cdot 10^{-7}$  to  $1 \cdot 10^{-1}$  mmol per gram of polymeric porous support.
39. (withdrawn): The catalyst component according to claim 31, wherein said polymeric porous support has a porosity greater than 10%.
40. (withdrawn): The catalyst component according to claim 39, wherein said polymeric porous support has a porosity greater than 10%.